

HW ANSWERS:

25) (a) $H_0: p = 0.27$

$H_a: p < 0.27$ * one tailed *

(b) Concluding that the % of minorities is less than 27% when really it is still 27%.

(c) Concluding that the % of minorities is still 27% when it really is less 27%.

(d) Saying that the % of minorities is less than 27%, and it IS less than 27%.

(e) increase alpha = increase power

(f) increase n = increase power

27) (a) one tailed

(b) $H_0: p = 0.13$

$H_a: p < 0.13$

(c) Type I = The professor concludes that the dropout rate has decreased (is less than 13%), when really is has not (is still 13%)

(d) Type II = The professor concludes that the dropout rate has remained at 13%, when really is has gone down (is less than 13%)

(e) The professor concludes that the dropout rate has decreased (is less than 13%) and it really has decreased.

28) (a) $H_0: p = 0.20$

$H_a: p > 0.20$

(b) Because this reduces the chance of a Type 1 error.

(c) Saying the % of residents who recognize the company's product is more than 20%, and they are right, it really is more than 20%

(d) The power higher for $\alpha = 10\%$

Because as α increases, power increases.

(e) increased $n \Rightarrow$ increased power

increased power \Rightarrow decreased Type 2 error.